



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE069

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Kodiak Ferry Terminal and Dock Improvements Project

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that we have issued an incidental harassment authorization (IHA) to the Alaska Department of Transportation and Public Facilities (DOT&PF) to incidentally harass four species of marine mammals during activities related to the reconstruction of the existing ferry terminal at Pier 1 in Kodiak, AK.

DATES: This authorization is effective from September 30, 2015, through September 29, 2016.

FOR FURTHER INFORMATION CONTACT: Robert Pauline, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of DOT&PF's application and supporting documents, as well as a list of the references cited in this document, may be obtained by visiting the Internet at:

www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. In case of problems accessing these

documents, please call the contact listed above (see **FOR FURTHER INFORMATION CONTACT**).

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS' review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization. Except with respect to

certain activities not pertinent here, the MMPA defines "harassment" as “any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].”

Summary of Request

On March 27, 2015, NMFS received an application from the DOT&PF for the taking of marine mammals incidental to reconstructing the existing ferry terminal at Pier 1 in Kodiak, Alaska, referred to as the Kodiak Ferry Terminal and Dock Improvements project (State Project Number 68938). On June 18, 2015 NMFS received a revised application. NMFS determined that the application was adequate and complete on June 25, 2015. DOT&PF proposed to conduct in-water work that may incidentally harass marine mammals (i.e., pile driving and removal). This IHA is valid from September 30, 2015 through September 29, 2016.

Activities included as part of the Kodiak Ferry Terminal and Dock Improvements project (Pier 1 project) with potential to affect marine mammals include vibratory and impact pile-driving operations and use of a down-the-hole (DTH) drill/hammer to install piles in bedrock. The use of impact and vibratory pile driving as well as DTH drilling is expected to produce underwater sound at levels that have the potential to result in limited injury and behavioral harassment of marine mammals. Species with the expected potential to be present during the project timeframe include transient killer whale (*Orcinus orca*), western distinct population segment (wDPS) of Steller sea lion (*Eumetopias jubatus jubatus*), harbor porpoise (*Phocoena phocoena*), and harbor seal (*Phoca vitulina richardii*).

Description of the Specified Activity

Overview

DOT&PF requested an IHA for work that includes removal of the old timber dock and piles and installation of the new dock, including mooring and fender systems. The existing decking, piles, and other dock materials will be removed. Temporary steel H-piles will be installed to support temporary false work structures (i.e., templates). The new dock will be supported by steel piles, and dock fenders will include steel piles and timber piles.

Dates and Duration

Pile installation and extraction associated with the Pier 1 project will begin no sooner than September 30, 2015 and will be completed no later than September 29, 2016 (1 year following IHA issuance). To minimize impacts to pink salmon (*Oncorhynchus gorbuscha*) fry and coho salmon (*O. kisutch*) smolt, all in-water pile extraction and installation is planned to be completed by April 30, 2016. If work cannot be completed by April 30, the Alaska Department of Fish & Game (ADF&G) recommended that the DOT&PF refrain from impact pile installation without a bubble curtain from May 1 through June 30 within the 12-hour period beginning daily at the start of civil dawn (Marie 2015). ADF&G stated that this is the daily time period when the majority of juvenile salmon are moving through the project area, and a 12-hour quiet period may protect migrating juvenile salmon from excessive noise (Frost 2015). Impact pile installation would be acceptable without a bubble curtain from May 1 through June 30 in the evenings, beginning at 12 hours past civil dawn (Marie 2015). At this time, DOT&PF does not propose using bubble curtains. However, it is possible that in-water work may extend past April 30 in compliance with the mitigation for salmon as recommended by ADF&G.

The Kodiak Pier 1 Project is estimated to require 120 total days of in-water pile extraction and installation construction work, which includes vibratory driving, impact driving, and down-hole drilling. The total number of in-water pile extraction and installation days (120 days) includes approximately 80 days of vibratory pile extraction and installation, 22 days of impact hammering, and 60 days of down-hole drilling. The 22 days of impact hammering are subsumed within the same 80 days during which extraction and installation will occur. The construction schedule assumes that approximately 20 days of drilling will overlap with impact and vibratory pile driving activities. The project will require an estimated 60 hours of vibratory hammer time, 440 hours of down-hole drilling time, and 2 hours of impact hammer time. DOT&PF has conservatively added a contingency of 25% to the total hours required resulting in 75 hours of vibratory hammer time, 550 hours of down-hole drilling time, and 3 hours of impact hammer time.

Specific Geographic Region

The Kodiak Ferry Terminal and Dock at Pier 1 is located in the City of Kodiak, Alaska, at 57°47'12.78"N, 152°24'09.73"W, on the northeastern corner of Kodiak Island, in the Gulf of Alaska. Pier 1 is an active ferry terminal and multi-use dock located in Near Island Channel, which separates downtown Kodiak from Near Island.

Detailed Description of Activities

We provided a description of the proposed action in our **Federal Register** notice announcing the proposed authorization (80 FR 51211; August 24, 2015). Please refer to that document; we provide only summary information here.

DOT&PF plans to construct a new ferry terminal at Pier 1 in Kodiak. The project includes the removal of 196 timber piles and 14 steel piles using a vibratory hammer, crane,

and/or clamshell bucket. DOT&PF would install and remove 88 temporary steel pipe or H-piles using a vibratory hammer; install 8 16-in timber and 10 18-in steel piles using a vibratory hammer, and install 88 24-in steel piles using a vibratory hammer, down-hole drill/hammer, and impact hammer. The activities are expected to take place over 120 days, weather permitting. DOT&PF would limit pile driving and removal activities to daylight hours only, however, drilling, would not be limited to daylight hours.

Comments and Responses

A notice of NMFS' proposal to issue an IHA was published in the **Federal Register** on August 24, 2015 (80 FR 51211). During the 30-day public comment period, the Marine Mammal Commission (Commission) submitted a letter. The letter is available on the Internet at www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. All comments specific to the DOT&PF's application that address the statutory and regulatory requirements or findings NMFS must make to issue an IHA are addressed in this section of the **Federal Register** notice.

Comment 1: The Commission recommended that NMFS require AK DOT to (1) re-estimate the Level A and B harassment zones for both vibratory and impact pile driving of the various types of piles based on a 15 log R transmission loss value and/or a Level B harassment threshold of 120-dB re 1 μ Pa threshold for vibratory pile driving and (2) conduct monitoring of those revised zones rather than the zones stipulated in the **Federal Register** notice.

Response: While we agree generally with the Commission's points, we feel that the deviations from standard practice are supportable. As such, we elect to use transmission loss values based on 18logR for vibratory pile driving and 17logR for impact pile driving while noting that the Alaska Regional Office agreed with our ZOI calculations and used the same methods in their analysis pursuant to section 7 of the ESA. The Commission acknowledges that

these issues do not affect the estimated number of takes authorized, and recommends simply that we require DOT&PF to re-estimate the ZOIs and conduct monitoring of the revised zones rather than those stipulated in our notice of proposed authorization. We partially concur with the Commission's recommendation and will require DOT&PF to monitor the revised ZOIs, with the exception of the larger ZOI associated with vibratory driving. The project site is located in a narrowly constrained water body, and local topography and existing structures make it unlikely that the actual insonified area would exceed that estimated in our notice of proposed authorization. We therefore retain that ZOI in the IHA. NMFS appreciates the Commission's concerns and will encourage future applicants to utilize NMFS' methodologies when measuring ambient sound levels for incorporation into future IHA applications.

Description of Marine Mammals in the Area of the Specified Activity

There are four marine mammal species known to occur in the vicinity of the project area which may be subjected to Level A and Level B harassment. These are the killer whale, Steller sea lion, harbor porpoise, and harbor seal.

We have reviewed DOT&PF's detailed species descriptions, including life history information, for accuracy and completeness and refer the reader to Section 3 of DOT&PF's application as well as the proposed incidental harassment authorization published in the **Federal Register** (80 FR 51211) instead of reprinting the information here. Please also refer to NMFS' website (www.nmfs.noaa.gov/pr/species/mammals) for generalized species accounts which provide information regarding the biology and behavior of the marine resources that occur in the vicinity of the project area. We provided additional information for the potentially affected stocks, including details of stock-wide status, trends, and threats, in our **Federal Register** notice of proposed authorization (80 FR 51211).

Table 1 lists marine mammal stocks that could occur in the vicinity of the existing ferry terminal at Pier 1 that may be subject to Level A and B harassment and summarizes key information regarding stock status and abundance. Please see NMFS' Stock Assessment Reports (SAR), available at www.nmfs.noaa.gov/pr/sars, for more detailed accounts of these stocks' status and abundance.

Table 1. Marine Mammal Species Potentially Present in the Project Area

Species	Stock(s) Abundance Estimate ¹	ESA* Status	MMPA** Status	Frequency of Occurrence
Killer Whale (<i>Orcinus orca</i>) <i>Eastern N. Pacific, Alaska Resident Stock</i>	2,347	-	Non-depleted	Occasional
Killer Whale (<i>Orcinus orca</i>) <i>Eastern N. Pacific, Gulf of Alaska, Aleutian Islands, and Bering Sea Transient Stock</i>	587	--	Non-depleted	Occasional
Harbor Porpoise (<i>Phocoena phocoena</i>) <i>Gulf of Alaska Stock</i>	31,046	--	Non-depleted and Strategic	Occasional
Steller Sea Lion (<i>Eumetopias jubatus</i>) <i>wDPS Stock</i>	52,200	Endangered	Depleted and Strategic	Common
Harbor Seal (<i>Phoca vitulina richardii</i>) <i>South Kodiak Stock</i>	11,117	--	Non-depleted	Occasional

¹ NOAA/NMFS 2014 marine mammal stock assessment reports at <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

*ESA = Endangered Species Act

**MMPA = Marine Mammal Protection Act

Potential Effects of the Specified Activity on Marine Mammals

The **Federal Register** notice of proposed authorization (80 FR 51211) provides a general background on sound relevant to the specified activity as well as a detailed description of marine mammal hearing and of the potential effects of these construction activities on marine mammals, and is not repeated here.

Anticipated Effects on Habitat

We described potential impacts to marine mammal habitat in detail in our **Federal Register** notice of proposed authorization. In summary, the project activities would not modify

existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range. Because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences for individual marine mammals or their populations

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, “and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking” for certain subsistence uses.

Measurements from similar pile driving events were utilized to estimate zones of influence (ZOI; see “Estimated Take by Incidental Harassment”). ZOIs are often used to establish a mitigation zone around each pile (when deemed practicable) to identify where Level A harassment to marine mammals may occur, and also provide estimates of the areas Level B harassment zones. ZOIs may vary between different diameter piles and types of installation methods. DOT&PF will employ the following mitigation measures:

(a) Conduct briefings between construction supervisors and crews, marine mammal monitoring team, and DOT&PF’s staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.

(b) For in-water heavy machinery work other than pile driving (using, e.g., standard barges, tug boats, barge-mounted excavators, or clamshell equipment used to place or remove material), if a marine mammal comes within 10 m, operations shall cease and vessels shall reduce speed to the minimum level required to maintain steerage and safe working conditions. This type of work could include the following activities: (1) movement of the barge to the pile location or (2) positioning of the pile on the substrate via a crane (i.e., stabbing the pile).

(c) Utilize pile caps when impact driving is underway.

Monitoring and Shutdown for Pile Driving

The following measures apply to DOT&PF's mitigation through shutdown and disturbance zones:

Shutdown Zone – For all pile driving activities, the DOT&PF's will establish a shutdown zone. Shutdown zones are intended to contain the area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area), thus preventing injury of marine mammals. A conservative 4-meter shutdown zone will be in effect for Steller sea lions and harbor seals. Note that pile driving operations do not need to shut down if Steller sea lions are observed in the Shutdown zone. Occurrences of sea lions in that zone will be recorded as Level A takes. The shutdown zone for harbor porpoises and killer whales will be 20 meters. DOT&PF, would also implement a minimum shutdown zone of 10 m radius for all marine mammals for in-water heavy machinery work other than pile driving. These precautionary measures are intended to further reduce the unlikely possibility of injury from direct physical interaction with construction operations.

Disturbance Zone – The disturbance zones provide utility for monitoring conducted for mitigation purposes (i.e., shutdown zone monitoring) by establishing monitoring protocols for

areas adjacent to the shutdown zones. Monitoring of disturbance zones enables observers to be aware of and communicate the presence of marine mammals in the project area but outside the shutdown zone and thus prepare for potential shutdowns of activity. However, the primary purpose of disturbance zone monitoring is for documenting incidents of Level B harassment; disturbance zone monitoring is discussed in greater detail later (see “Proposed Monitoring and Reporting”). Nominal radial distances for disturbance zones are shown in Table 2.

During impact driving, the disturbance zone shall extend to 350 meters for Steller sea lions, harbor seals, harbor porpoises, and killer whales. This 350-meter distance will serve as a shutdown zone for all other marine mammals for which take is not authorized (e.g. humpback whale, Dall’s porpoise, gray whale, fin whale, or any other) to avoid Level B take. Level B take of humpback whales, Dall’s porpoises, gray whales, and fin whales is not requested and will be avoided by shutting down before individuals of these species enter the Level B zone.

During vibratory pile installation and removal, the disturbance zone shall extend to 1,150 meters for Steller sea lions, harbor seals, harbor porpoises, and killer whales. This distance will also serve as a shutdown zone for all other marine mammals for which take is not authorized to avoid Level B take.

During DTH drilling, the disturbance zone shall extend to 300meters for species for which take is authorized. This distance will serve as a shutdown zone for all other marine mammals for which take is not authorized to avoid Level B take. Note that per request from the applicant we considered additional information for purposes of developing an appropriate DTH monitoring zone. Our findings are based on 2015 hydroacoustic monitoring conducted near Pier 3 in Kodiak provided recent sound source level values (PND 2015). We considered this the best available information for DTH proxy source levels and used it to derive the DTH disturbance

zone radius for this project. This change has no effect on estimated take levels associated with DTH drilling

Thresholds for Level A and Level B harassment are shown in Table 2.

Table 2. Minimum Radial Distance to Shutdown and Disturbance Zones.

Method	Level A		Level B
	Pinnipeds	Cetaceans	Pinnipeds and Cetaceans
Vibratory hammer	-		1150 m
Down-hole Drill (continuous)	-		300 m
Impact hammer (all with Caps)	4	20	350 m

Time Restrictions— For all in-water pile driving activities, the DOT&PF shall operate up to a maximum of 10 hours per day, which allows time for twilight operations during shortened winter days.

In order to document observed incidents of harassment, observers record all marine mammal observations, regardless of location. The observer's location, as well as the location of the pile being driven, is known from a GPS. The location of the animal is estimated as a distance from the observer, which is then compared to the location from the pile and the estimated ZOIs for relevant activities (i.e., pile installation and removal). This information may then be used to extrapolate observed takes to reach an approximate understanding of actual total takes.

Ramp Up or Soft Start - The use of a soft start procedure is believed to provide additional protection to marine mammals by warning or providing a chance to leave the area prior to the hammer operating at full capacity, and typically involves a requirement to initiate sound from the hammer at reduced energy followed by a waiting period. This procedure is repeated two additional times. It is difficult to specify the reduction in energy for any given hammer because of variation across drivers. The project will utilize soft start techniques for all vibratory and

impact pile driving. We require the DOT&PF to initiate sound from vibratory hammers for fifteen seconds at reduced energy followed by a 1-minute waiting period, with the procedure repeated two additional times. For impact driving, we require an initial set of three strikes from the impact hammer at reduced energy, followed by a 1-minute waiting period, then two subsequent three strike sets. Soft start will be required at the beginning of each day's pile driving work and at any time following a cessation of pile driving of 30 minutes or longer.

If a marine mammal is present within the Level A harassment zone, ramping up will be delayed until the animal(s) leaves the Level A harassment zone. Activity will begin only after the Wildlife Observer has determined, through sighting, that the animal(s) has moved outside the Level A harassment zone or 15 minutes have passed for small odontocetes and pinnipeds and 30 minutes have passed for large and medium-sized whales, including killer whales, without re-detection of the animal.

If a Steller sea lion, harbor seal, harbor porpoise, or killer whale is present in the Level B harassment zone, ramping up will begin and a Level B take will be documented. Ramping up will occur when these species are in the Level B harassment zone whether they entered the Level B zone from the Level A zone, or from outside the project area.

If any marine mammal other than Steller sea lions, harbor seals, harbor porpoises, or killer whales is present in the Level B harassment zone, ramping up will be delayed until the animal(s) leaves the zone. Ramping up will begin only after the Wildlife Observer has determined, through sighting, that the animal(s) has moved outside the harassment zone or 15 minutes have passed for small odontocetes and pinnipeds and 30 minutes have passed for large and medium-sized whales without re-detection of the animal.

Monitoring

Monitoring Protocols – Monitoring would be conducted before, during, and after pile driving. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from piles being driven. Observations made outside the shutdown zone will not result in shutdown and that pile segment would be completed without cessation, unless the animal approaches or enters the shutdown zone, at which point all pile driving activities would be halted. Monitoring will take place from thirty minutes prior to initiation through thirty minutes post-completion of pile driving activities. Pile driving activities include the time to remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than thirty minutes.

The following additional measures apply to visual monitoring:

(1) Monitoring will be conducted by at least two qualified observers, who will be stationed to provide adequate view of the harassment zone mammals. One observer will be stationed on Pier 1 while a second observer may be located on Near Island or another site offering optimal viewing. Observers must be in a location that allows them to implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. Monitoring will take place from 30 minutes prior to initiation through 30 minutes post-completion of pile driving activities.

Qualified observers are trained biologists, with the following minimum qualifications:

(a) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

(b) Education, training, or suitable combination thereof in biological science, wildlife management, mammalogy or related fields. Observers should have field experience in identification and behavior of marine mammals and project-specific training.

(c) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(d) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(e) Experience or training in protocols to communicate with contractors and operators, including shut down procedures.

(f) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary

(g) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

(h) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and

(g) Must read and understand the monitoring plan and the IHA; agree to enforce the conditions presented therein, be able to coordinate and communicate with other personnel, and identify and report incidental harassment of marine mammals.

(h) Have no other project-related responsibility other than marine mammal monitoring, documentation, and reporting during observation periods.

(2) Prior to the start of pile driving activity, the shutdown zone will be monitored for 30 minutes to ensure that it is clear of marine mammals. Pile driving will only commence once observers have declared the shutdown zone clear of marine mammals; animals will be allowed to remain in the shutdown zone (i.e., must leave of their own volition) and their behavior will be monitored and documented. The shutdown zone may only be declared clear, and pile driving started, when the entire shutdown zone is visible (i.e., when not obscured by dark, rain, fog, etc.).

If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal shutdown zone (*e.g.* excessive wind or fog), pile installation will cease. Pile driving will not be initiated until the entire shutdown zone is visible.

The waters will be scanned 30 minutes prior to commencing pile driving at the beginning of each day, prior to commencing pile driving after any stoppage of 30 minutes or greater, and 30 minutes after driving operations have ceased for the day. If marine mammals enter or are observed within the designated marine mammal shutdown zone during or 30 minutes prior to pile driving, the monitors will notify the on-site construction manager to not begin until the animal has moved outside the designated radius.

If any marine mammal species are encountered during activities that are not listed in Table 1 for authorized taking and are likely to be exposed to sound pressure levels (SPLs) greater than or equal to 120 dB re 1mPa (rms), then the Holder of this Authorization must stop pile driving activities and report observations to NMFS' Office of Protected Resources.

If a marine mammal approaches or enters the shutdown zone during the course of vibratory pile driving operations, activity will be halted and delayed until the animal has voluntarily left and been visually confirmed beyond the shutdown zone. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and

30 minutes for cetaceans. If no marine mammals are seen by the observer in that time it will be assumed that the animal has moved beyond the exclusion zone.

Monitoring will be conducted throughout the time required to drive a pile. Marine mammal presence within the Level B harassment zone will be monitored, but vibratory driving or DTH drilling will not be stopped if marine mammals are found to be present. Any marine mammal documented within the Level B harassment zone during these activities would constitute a Level B take (harassment), and will be recorded and reported as such.

Mitigation Conclusions

We have carefully evaluated DOT&PF's proposed mitigation measures and considered their effectiveness in past implementation to determine whether they are likely to effect the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals, (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation.

Any mitigation measure(s) we prescribe should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

- (1) Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

(2) A reduction in the number (total number or number at biologically important time or location) of individual marine mammals exposed to stimuli expected to result in incidental take (this goal may contribute to 1 above).

(3) A reduction in the number (total number or number at biologically important time or location) of times any individual marine mammal would be exposed to stimuli expected to result in incidental take (this goal may contribute to 1 above).

(4) A reduction in the intensity of exposure to stimuli expected to result in incidental take (this goal may contribute to 1 above).

(5) Avoidance or minimization of adverse effects to marine mammal habitat, paying particular attention to the prey base, blockage or limitation of passage to or from biologically important areas, permanent destruction of habitat, or temporary disturbance of habitat during a biologically important time.

(6) For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of DOT&PF's proposed measures, including information from monitoring of implementation of mitigation measures very similar to those described here under previous IHAs from other marine construction projects, we have determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking".

The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Any monitoring requirement we prescribe should improve our understanding of one or more of the following:

- (1) An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;
- (2) An increase in our understanding of how many marine mammals are likely to be exposed to levels of pile driving that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;
- (3) An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:
 - Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);

- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
 - Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;
- (4) An increased knowledge of the affected species; and
- (5) An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

The DOT&PF consulted with NMFS to create a marine mammal monitoring plan as part of the IHA application for this project.

Visual Marine Mammal Observations

- At least two marine mammal observers (MMOs) meeting the minimum qualifications listed below will monitor the shutdown and disturbance zones during impact driving, vibratory pile driving and down-hole drilling. One observer will be stationed on Pier 1 while a second observer will be located on Near Island or another site offering optimal viewing.
- During all in-water driving and drilling activity, the disturbance zone will be monitored by two observers at locations listed above. The monitoring staff will record any presence of marine mammals by species, will document any behavioral responses noted, and record Level B takes when sightings overlap with pile installation activities.
- The individuals will scan the waters within each monitoring zone activity using binoculars (Vector 10X42 or equivalent), spotting scopes (Swarovski 20-60 zoom or equivalent), and visual observation.

- The area within which the disturbance zone thresholds could be exceeded will be monitored for the presence of marine mammals. Marine mammal presence within these zones, if any, will be monitored but pile driving activity will not be stopped if marine mammals were found to be present. Any marine mammal documented within the disturbance zone will constitute a Level B take, and will be recorded and used to document the number of take incidents.
- If waters exceed a sea-state which restricts the observers' ability to make observations within the marine mammal buffer zone (e.g. excessive wind or fog), pile installation will cease until conditions allow the resumption of monitoring.
- The waters will be scanned for 30 minutes before driving operations begin for the day and 30 minutes after any and all pile driving and removal activities cease for the day.
- If marine mammals enter or are observed within the designated marine shutdown zone during or 30 minutes prior to pile driving, the monitors will notify the on-site construction manager to not begin until the animal has moved outside the designated radius.
- If a marine mammal approaches the shutdown zone prior to initiation of pile driving, the DOT&PF cannot commence activities until the marine mammal (a) is observed to have left the Level A harassment zone or (b) or has not been detected for 15 minutes (small odontocetes and pinnipeds) or for 30 minutes (large and medium-sized whales, including killer whales) without re-detection of the animal.
- The waters will continue to be scanned for at least 30 minutes after pile driving has completed each day, and after each stoppage of 30 minutes or greater.

Data Collection

Observers are required to use approved data forms. Among other pieces of information, DOT&PF will record detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal, if any. In addition, the DOT&PF will attempt to distinguish between the number of individual animals taken and the number of incidents of take. At a minimum, the following information will be collected on the sighting forms:

- Date and time that monitored activity begins or ends;
- Construction activities occurring during each observation period;
- Weather parameters (e.g., percent cover, visibility);
- Water conditions (e.g., sea state, tide state);
- Species, numbers, and, if possible, sex and age class of marine mammals;
- Description of any observable marine mammal behavior patterns, including bearing and direction of travel and distance from pile driving activity;
- Distance from pile driving activities to marine mammals and distance from the marine mammals to the observation point;
- Locations of all marine mammal observations; and
- Other human activity in the area.

Reporting

DOT&PF will notify NMFS prior to the initiation of the pile driving activities and will provide NMFS with a draft monitoring report within 90 days of the conclusion of the proposed

construction work. This report will detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines “harassment” as: “...any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].”

Anticipated takes would be both Level A, for Steller sea lions only, and Level B harassment resulting from vibratory pile driving/removal and drilling. Note that lethal takes are not expected. Furthermore, mitigation measures are expected to minimize the number of Level A injurious takes.

Given the many uncertainties in predicting the quantity and types of impacts of sound in every given situation on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound, based on the available science.

This practice potentially overestimates the numbers of marine mammals taken for stationary activities, as it is likely that some smaller number of individuals may accrue a number

of incidences of harassment per individual than for each incidence to accrue to a new individual, especially if those individuals display some degree of residency or site fidelity and the impetus to use the site (e.g., because of foraging opportunities) is stronger than the deterrence presented by the harassing activity.

The method used for calculating potential exposures to impact and vibratory pile driving noise for each threshold was estimated using local marine mammal data sets, the Biological Opinion, best professional judgment from state and federal agencies, and data from IHA estimates on similar projects with similar actions. Our take estimation methodology was described in detail in our **Federal Register** notice announcing the proposed authorization (80 FR 51211; August 24, 2015) and is not repeated here. Brief descriptions are provided below and results are in Table 4.

Steller Sea Lions

Incidental take was estimated for Steller sea lions by assuming that, within any given day, about 40 unique individual Steller sea lions may be present at some time during that day within the Level B harassment zone during active pile extraction or installation. This estimate was derived from the following information, previously described in the proposed authorization **Federal Register** notice (80 FR 51211; August 24, 2015).

Pinniped population estimates are typically made when the animals are hauled out and available to be counted. Steller sea lions hauled out on the Dog Bay float are believed to represent the Kodiak Harbor population. Aerial surveys from 2004 through 2006 indicated peak winter (October–April) counts at the Dog Bay float ranging from 27 to 33 animals (Wynn *et al.* 2011). Counts in February 2015 during a site visit by HDR biologists ranged from approximately 28 to 45 Steller sea lions. More than 100 Steller sea lions were counted on the Dog Bay float at

times in spring 2015, although the mean number was much smaller (Wynne 2015b). Together, this information may indicate a maximum population of about 120 Steller sea lions that uses the Kodiak harbor area.

Steller sea lions found in more “natural” settings do not usually eat every day, but tend to forage every 1–2 days and return to haulouts to rest between foraging trips (Merrick and Loughlin 1997; Rehburg *et al.* 2009). This means that on any given day a maximum of about 60 Steller sea lions from the local population may be foraging. Note that there are at least four other seafood processing facilities in Kodiak that operate concurrently with the one located next to Pier 1, and all are visited by local Steller sea lions looking for food (Wynne 2015a). The seafood processing facility adjacent to the Pier 1 project site is not the only source of food for local Steller sea lions that inhabit the harbor area. The foraging habits of Steller sea lions using the Dog Bay float and Kodiak harbor area are not documented, but it is reasonable to assume that, given the abundance of readily available food, not every Steller sea lion in the area visits the seafood processing plant adjacent to Pier 1 every day. If about half of the foraging Steller sea lions visit the seafood processing plant adjacent to Pier 1, it is estimated that about 30 unique individual Steller sea lions likely pass through the Pier 1 project area each day and could be exposed to Level B harassment. To be conservative, exposure is estimated at 40 unique individual Steller sea lions per day.

It is assumed that Steller sea lions may be present every day, and also that take will include multiple harassments of the same individual(s) both within and among days, which means that these estimates are likely an overestimate of the number of individuals.

Expected durations of pile extraction and driving were estimated in Section 1.4 of the application. For each pile extraction or installation activity, the calculation for Steller sea lion exposures to underwater noise is therefore estimated as:

Exposure estimate = (number of animals exposed > sound thresholds)/day * number of days of activity

An estimated total of 3,200 Steller sea lions (40 sea lions/day * 80 days of pile installation or extraction) could be exposed to noise at the Level B harassment level during vibratory and impact pile driving (Table 3). Potential exposure at the Level B harassment level for down-hole drilling is estimated at 60 Steller sea lions, roughly one every one to two days.

Table 3. Numbers of potential exposures of Steller sea lions to Level A and Level B harassment noise from pile driving based on predicted underwater noise levels resulting from project activities

	Vibratory and Impact	Down-hole Drill	Impact Hammer
	Level B	Level B	Level A
Number of Days	80 days	60 days	22 days
Number of Steller Sea Lion Exposures	3,200	60	30

The attraction of sea lions to the seafood processing plant increases the possibility of individual Steller sea lions occasionally entering the shutdown zone before they are observed and before pile driving can be shut down. Even with marine mammal observers present at all times during pile installation, it is possible that sea lions could approach quickly and enter the shutdown zone, even as pile driving activity is being shut down. This likelihood is increased by the high level of sea lion activity in the area, with Steller sea lions following vessels and swimming around vessels at the neighboring dock. It is possible that a single sea lion could be taken each day that impact pile driving occurs. As such, NMFS allowed an additional 22 Level A takes plus a roughly 30 percent contingency of 8 additional takes, for a total of 30 takes for Level

A harassment. Potential for Level A harassment of Steller sea lions is estimated to only occur during impact hammering due to the very small Level A harassment zones for all other construction activities.

Harbor Seals

Harbor seals are expected to be encountered in low numbers, if at all, within the project area. However, based on the known range of the South Kodiak stock, and occasional sightings during monitoring of projects at other locations on Kodiak Island, NMFS has authorized 40 Level B takes (1 take every other day) of harbor seals by exposure to underwater noise over the duration of construction activities.

Harbor Porpoises

Harbor porpoises are expected to be encountered in low numbers, if at all, within the project area. However, based on the known range of the Gulf of Alaska stock and occasional sightings during monitoring of projects at other locations on Kodiak Island, NMFS has authorized 40 Level B takes (1 take every other day) of harbor porpoises by exposure to underwater noise over the duration of construction activities.

Killer Whales

Resident killer whales are rarely sighted in the project area and, therefore, NMFS is not proposing the take of any resident killer whales. Transient killer whales are expected to be encountered in the project area occasionally, although no data exist to quantify killer whale attendance. Killer whales are expected to be in the Kodiak harbor area sporadically from January through April and to enter the project area in low numbers. Based on the known range and behavior of the Alaska Resident stock and the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stocks, it is reasonable to estimate that 6 individual whales may enter the project

area twice a month from February through May. NMFS, therefore, has authorized 48 Level B takes (6 killer whales/visit * 2 visits/month * 4 months) of killer whales by exposure to

Analyses and Determinations

Negligible Impact Analysis

Negligible impact is “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

To avoid repetition, the discussion of our analyses applies to all the species listed in Table 4, with the exception of Steller sea lions, given that the anticipated effects of this pile driving project on marine mammals are expected to be relatively similar in nature. There is no information about the size, status, or structure of any species or stock that would lead to a different analysis for this activity, else species-specific factors would be identified and analyzed. A separate analysis is included for Steller sea lions

Pile extraction, pile driving, and down-hole drilling activities associated with the reconstruction of the Pier 1 Kodiak Ferry Terminal and Dock, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level A (injury) of Steller sea lions and Level B harassment (behavioral disturbance) for all species authorized for take, from underwater sounds generated from pile driving and drilling. Potential takes could occur if individuals of these species are present in the insonified zone when pile driving or drilling is under way.

The takes from Level B harassment will be due to potential behavioral disturbance and TTS. Serious injury or death is unlikely for all authorized species and injury is unlikely for these species, with the exception of Steller sea lions, as DOT&PF will enact several required mitigation measures. Soft start techniques will be employed during pile driving operations to allow marine mammals to vacate the area prior to commencement of full power driving. Pile cushions will be used for all impact driving. DOT&PF will establish and monitor shutdown zones for authorized species with the exception of Steller sea lions. These measures will prevent injury to these species, except for Steller sea lions. DOT&PF will also record all occurrences of marine mammals and any behavior or behavioral reactions observed, any observed incidents of behavioral harassment, and any required shutdowns, and will submit a report upon completion of the project. We have determined that the required mitigation measures are sufficient to reduce the effects of the specified activities to the level of least practicable impact, as required by the MMPA.

The DOT&PF's proposed activities are localized and of short duration. The entire project area is limited to the Pier 1 area and its immediate surroundings. Specifically, the use of impact driving will be limited to an estimated maximum of 3 hours over the course of 80 days of

construction, and will likely require less time. Each 24-inch pile will require about five blows of an impact hammer to confirm that piles are set into bedrock for a maximum time expected of 1 minute of impact hammering per pile (88 piles x 1 minute/per pile = 88 minutes). Vibratory driving will be necessary for an estimated maximum of 75 hours and down-hole drilling will require a maximum of 550 hours. Vibratory driving and down-hole drilling do not have significant potential to cause injury to marine mammals due to the relatively low source levels produced and the lack of potentially injurious source characteristics.

The Level A takes for Steller sea lions are likely to be in the form of PTS. The possibility of take by serious injury or death is considered very unlikely as only acoustic injury is anticipated to occur. However, the number of Steller sea lions potentially exposed to Level A harassment is a small portion of entire population. Furthermore, sea lions resident to the project area are likely to have experienced frequent deterrence by fisherman protecting their gear or catch as was described in the **Federal Register** notice of proposed authorization. Such deterrence, typically involving “seal bombs”, produces sound above that believed to potential cause permanent hearing impairment in pinnipeds. Therefore, it is likely that Steller sea lions occurring within the shutdown zone – for which Level A harassment is authorized – would not in fact experience additional hearing impairment. In the unlikely event that injury, in the form of acoustic impairment, did occur to this small number of sea lions it would be unlikely to have an adverse effect on the continued existence of the stock.

The project also is not expected to have significant adverse effects on affected marine mammals' habitat, including Steller sea lion critical habitat. The project activities would not modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited

portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (e.g., Thorson and Reyff, 2006; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. In response to vibratory driving, pinnipeds (which may become somewhat habituated to human activity in industrial or urban waterways) have been observed to orient towards and sometimes move towards the sound. The pile extraction and driving activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations, which have taken place with no reported serious injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment. Repeated exposures of individuals to levels of sound that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in fitness for the affected individuals, and thus would not result in any adverse impact to the stock as a whole.

In summary, this negligible impact analysis is founded on the following factors: (1) the possibility of serious injury or mortality to authorized species and additional auditory injury to hearing impaired Steller sea lions may reasonably be considered discountable; (2) the anticipated

incidents of Level B harassment consist of, at worst, temporary modifications in behavior and;

(3) the presumed efficacy of the planned mitigation measures in reducing the effects of the specified activity to the level of least practicable impact. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activity will have only short-term effects on individuals. The specified activity is not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the planned monitoring and mitigation measures, NMFS finds that the total marine mammal take from the DOT&PF's reconstruction of the Pier 1 Kodiak Ferry Terminal and Dock will have a negligible impact on the affected marine mammal species or stocks.

Table 4. Estimated Numbers and Percentage of Stock That May Be Exposed to Level A and B Harassment

Species	Proposed Authorized Takes	Stock(s) Abundance Estimate	Percentage of Total Stock
Killer Whale (<i>Orcinus orca</i>) <i>Eastern N. Pacific, Gulf of Alaska, Aleutian Islands, and Bering Sea Transient Stock</i>	48	587	8.1%
Harbor Porpoise (<i>Phocoena phocoena</i>) <i>Gulf of Alaska Stock</i>	40	31,046	<0.01%
Steller Sea Lion (<i>Eumetopias jubatus</i>) <i>wDPS Stock</i>	3,290*	52,200	6.3
Harbor Seal (<i>Phoca vitulina richardii</i>) <i>South Kodiak Stock</i>	40	11,117	<0.01%

*(Includes 3,260 Level B and 30 Level A takes)

Small Numbers Analysis

Table 4 demonstrates the number of animals that could be exposed to received noise levels that could cause Level A and Level B behavioral harassment for the proposed work at the

Pier 1 project site. The analyses provided above represents between <0.01% - 8.1% of the populations of these stocks that could be affected by harassment. The numbers of animals authorized to be taken for all species would be considered small relative to the relevant stocks or populations even if each estimated taking occurred to a new individual – an extremely unlikely scenario. For pinnipeds, especially Steller sea lions, occurring in the vicinity of Pier 1 there will almost certainly be some overlap in individuals present day-to-day, and these takes are likely to occur only within some small portion of the overall regional stock.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, which are expected to reduce the number of marine mammals potentially affected by the proposed action, NMFS finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

Alaska Natives have traditionally harvested subsistence resources in the Kodiak area for many hundreds of years, particularly Steller sea lions and harbor seals. No traditional subsistence hunting areas are within the project vicinity. The nearest haulouts for Steller sea lions and harbor seals are the Long Island and Cape Chiniak haul-outs and the Marmot Island rookery, many miles away. These locations are respectively 4, 12 and 30 nautical miles distant from the project area. Since all project activities will take place within the immediate vicinity of the Pier 1 site, the project will not have an adverse impact on the availability of marine mammals for subsistence use at locations farther away. No disturbance or displacement of sea lions or harbor seals from traditional hunting areas by activities associated with the Pier 1 project is expected. No changes to availability of subsistence resources will result from Pier 1 project activities.

Therefore, we have determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

The Steller sea lion is the only marine mammal species listed as endangered under the ESA with confirmed occurrence in the study area. On July 31, 2015 NMFS issued the *Kodiak Ferry Terminal Improvements Project Biological Opinion* finding that the proposed action is not likely to jeopardize the continued existence of wDPS Steller sea lions.

National Environmental Policy Act (NEPA)

NMFS drafted a document titled *Environmental Assessment for Issuance of an Incidental Harassment Authorization to the Alaska Department of Transportation and Public Facilities for the Take of Marine Mammals Incidental to a Kodiak Ferry Terminal and Dock Improvements Project and Finding of No Significant Impact* (FONSI). The FONSI was signed on September 30, 2015.

Authorization

As a result of these determinations, we have issued an IHA to DOT&PF for conducting the described activities related to the reconstruction of the ferry terminal at Pier 1 in Kodiak, AK

from September 30, 2015 through September 29, 2016 provided the previously described mitigation, monitoring, and reporting requirements are incorporated.

Dated: October 1, 2015.

Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.

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